EMERGENCY CASEBOOK

Tendinitis: the achilles heel of quinolones!

P Shortt, R Wilson, I Erskine

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We present a case series of two patients who presented to the emergency department with spontaneous bilateral Achilles tendon rupture associated with the use of ciprofloxacin. Tendinitis and tendon rupture are now well recognised but rare complications of treatment with quinolone antimicrobials. The emergency department is an important setting for both surveillance and detection of adverse events associated with drug treatment.

CASE 1

A 62-year-old woman was referred to the emergency department by her general practitioner. She reported a 5-day history of progressive pain at the posterior aspect of both ankles. On the day before presentation, she had been ascending stairs at home when she felt a ''popping'' sensation at the back of her right ankle. She then transferred her weight on the other leg and felt a similar popping sensation in the left ankle.

On examination, the patient's ankle was tender 3 cm proximal to the Achilles insertion bilaterally. She was unable to stand on tiptoe and Simmonds test was abnormal bilaterally. Examination was suspicious of Achilles tendon rupture.

Ultrasound examination showed bilateral full-thickness Achilles tendon ruptures.

Further questioning disclosed that the patient had finished a course of ciprofloxacin 500 mg twice daily 2 days before the onset of symptoms, for treatment of a chest infection. One month before the onset of symptoms, she had been treated with a single injection of methylprednisolone acetate 40 mg intramuscularly for rheumatoid arthritis.

She was immobilised in equinus casts and reviewed at orthopaedic outpatients. By 3 months, she was recovering well but still had a degree of plantar flexion restriction.

CASE 2

A 65-year-old woman presented to the emergency department with a 5-week history of progressive pain in the Achilles region. For 3 days she had been finding it difficult to walk, which prompted this hospital attendance. Examination showed weakness of plantar flexion bilaterally and inability to stand on tiptoe. Simmonds test was equivocal. A subsequent ultrasound examination showed bilateral 50% Achilles tendon tears. The patient reported a history of asthma treated with frequent courses of steroids, and she had been prescribed both prednisolone 40 mg once daily and ciprofloxacin 500 mg twice daily for 7 days, 8 weeks previously.

This patient was also immobilised in equinus casts and by 3 months had made a full recovery.

DISCUSSION

Quinolone antimicrobials affect the Achilles tendon, most often followed by quadriceps femoris tendon, rotator cuff tendons (especially supraspinatus) and biceps brachii tendon, although any tendon can be affected. Quinolone tendinopathy occurs more commonly in tendons under high stress.[1] The exact mechanism is unknown, but thought to include matrix-degrading proteolytic activity and ischaemic processes leading to an imbalance in the cell:matrix ratio.[2] The sudden onset of some tendinopathies also suggests a direct cytotoxic effect on the tendons. The timing of onset of symptoms relative to the start of treatment is quite variable, ranging from 1 day in some cases to several months in others, but one study showed a mean of 6 days.[3] The most common symptoms are pain, swelling and functional disability, and up to 50% of patients can have tendinopathy in both Achilles tendons. Actual tendon rupture has been found to occur in at least 25% of patients with preceding symptoms suggestive of tendonitis, and there seems to be a direct relationship between the severity and length of treatment and the presence of other risk factors.[3] These risk factors include increasing age, corticosteroid treatment and renal failure. People aged >60 years have been found to have a threefold increased relative risk of disease, whereas concurrent steroid use in this elderly group has been found to have a sixfold increased risk.[4]

CONCLUSION

Quinolone antimicrobial use, in association with other risk factors, predisposes to tendinopathy and subsequent prolonged morbidity. The Committee for Safety of Medicines reminds us that care must be taken when prescribing quinolones. Indeed, the Australian Adverse Drug Reaction Bulletin (1999) advises that these antibiotics should be stopped at the earliest sign or symptom of tendonitis to reduce the risk of tendon rupture. It is vitally important that emergency doctors ensure that quinolone antibiotics are not only prescribed appropriately but also that patients are cautioned of the risks associated with their use, and to seek medical attention if suggestive symptoms develop.

These interesting cases help to remind us that although many adverse drug reactions may be well recognised in the literature, the fact that they are uncommon can lead to them being overlooked in daily clinical practice.

Authors' affiliations
P Shortt, R Wilson, Craigavon Area Hospital, Portadown, UK
I Erskine, Antrim Area Hospital, Antrim, UK

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Correspondence to: P Shortt, Craigavon Area Hospital, Portadown, Co Armagh, Northern, Ireland, UK; petershortt475@hotmail.com

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REFERENCES

1 **Khaliq Y**, Zhanel GG. Fluoroquinolone-associated tendinopathy: a critical review of the literature. *Clin Infect Dis* 2003;**36**:1404–10.
2 **Magra M**, Maffulli N. Matrix metalloproteases: a role in overuse tendinopathies. *Br J Sports Med* 2005;**39**:789–91.
3 **Van der Linden PD**, Van Puijenbroek EP, Feenstra J et al. Tendon disorders attributed to fluoroquinolones: a study on 42 spontanoeus reports in the period 1988 to 1998. *Arthritis Care Res* 2001;**45**:235–9.
4 **Van der Linden P**, Sturkenboom MC, Herings RM, *et al*. Fluoroquinolones and risk of Achilles tendon disorders: case-control study. *BMJ* 2002;**324**:1306–7.